

if we could find them, supposed to be absolute, we now look upon allied species as having descended from a common ancient stock, of which intermediate forms have died out, and therefore do not expect that allied forms, on the whole distinct and definable, should be completely unconnected by certain links or vestiges of links. Moreover, it used to be thought that hybrids were necessarily sterile, but it is now known that some hybrids are fertile, and that their offspring, fertilized by either parent, are generally fertile; that in this way intermediate forms between two species may originate; and it is clear that the two species ought not to be reduced to one on account of such intermediate forms. Dr. Gray referred to *Rosa*, *Rubus* and *Hieracium*, in the Old World, as genera in which no two botanists who had studied them could agree as to what were species; one school reducing them to very few, which they can define only by disregarding certain intermediate forms; the other multiplying them by hundreds, and characterizing them by distinctions which might serve for the specimens in hand, but which failed with every new collection. This necessitated either the formation of a still finer-drawn set of species, or the falling back to the broader Linnæan conception of a species. The latter alternative had been generally followed in this country, and Dr. Gray hoped that the coming American botanists would incline to this view in the treatment of our critical genera.

*Relation of Medullary Rays to the Strength of Timber.*—Dr. ROTHROCK called attention to some experiments made by Mr. Frank Day, in the laboratory of the University of Penna., on the relation of the medullary ray to the strength of timber. Mr. Day had found that it required just about twice as much force (say 1130 pounds) to pull apart a square inch of live oak, if the force ran parallel to these rays as if the force were applied at right-angles to them.

What is true of the live oak was also largely true of other timbers. The buttonwood (*Platanus occidentalis*) was remarkable for the development of its medullary rays, and also for the difficulty in splitting that wood at right-angles to them.

Mr. Day's experiments also proved that there existed great differences in the quality of the material of the woody fibre; for in timber where the relative proportion of wood and ducts could well be compared, and where the fibres were of equal size throughout, differences in strength were to be found.

*Botanical Notes. Double Flowers in Gelsemium nitidum; Euonymus Japonicus; Development of Fruit of Opuntia; Helianthus tuberosus; Carya glabra.*—Mr. MEEHAN exhibited two specimens of double flowers of *Gelsemium nitidum*, one found wild in Georgia, the other in Alabama. One was straw-colored, the other deep yellow. He remarked that many double flowers in